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COUNCIL
ON
COMPETITIVENESS

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COMPETITIVENESS INDEX

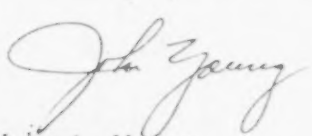
PREFACE

The Council on Competitiveness is pleased to publish its second annual Competitiveness Index. The Index has one fundamental purpose: to translate "competitiveness" into terms that the American public can readily understand. The Council believes that efforts to improve the competitive abilities of U.S. businesses and workers will be most effective if the American people understand our nation's position in the world economy — and how our standing affects their daily lives.

The Council's first Competitiveness Index, which was released in June 1988, was widely embraced as a practical means of gauging U.S. international economic performance. We also received constructive suggestions from such organizations as the U.S. Bureau of Labor Statistics, the U.S. Trade Representative's Office and several leading economists about how the Index might be improved. This year's Index incorporates some of those ideas and recommendations, and the methodological changes are discussed in the introduction of the Index.

We realize that there is no perfect measure of an issue as complex as U.S. competitiveness. We are equally convinced, however, that if the United States is to make progress in improving its ability to compete in global markets, the competitiveness issue must be placed in a context that is meaningful to the American public. The Index offers that context by assessing the economic performance of the United States in a global economic environment. To improve our standard of living over the long term, the Council believes that we must begin to focus on ways to improve U.S. performance in the international economy.

Although we initially had hoped to update the Index twice a year, we have found that because of the difficulty in gathering the data, this is not practicable. Instead, we will update it annually. I hope that you find the 1989 Index helpful in understanding U.S. performance in the changing world economy.



John A. Young
Chairman

JUNE 1989

INTRODUCTION

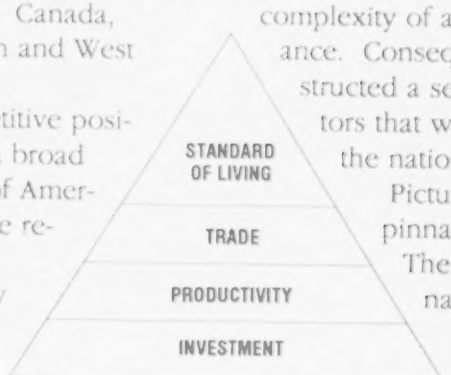
The Council on Competitiveness is pleased to publish its second annual Competitiveness Index. The Index measures the performance of the United States in the world economy compared to our major competitors — the other countries that, with the United States, collectively make up the Summit 7: Canada, France, Great Britain, Italy, Japan and West Germany.

The Index assesses the competitive position of the United States across a broad range of areas. Four measures of America's competitive performance are reported here: standard of living, trade, manufacturing productivity and investments. On the eve of the annual economic summit of the seven major industrial nations, the Competitiveness Index is intended to highlight the significant trends in the U.S. economic performance compared to the other nations preparing to gather in Paris.

Above all, the Index is intended to be a guide for the American people, not a comprehensive tool for policymakers or a definitive economic analysis. The Index is intended to offer a revealing picture of competitiveness to help the American people understand their changing fortunes in the global economy.

The Pyramid of Competitiveness

No single measure adequately reflects the complexity of a nation's competitive performance. Consequently, the Council has constructed a series of four interrelated indicators that we believe combine to measure the nation's competitiveness.



Picture a pyramid. At the pyramid's pinnacle is the **Standard of Living**. The ultimate aim of a productive nation is to generate a high standard of living for its citizens. Standard of living is measured here as Gross National Product per capita. As such, it shows how much income is generated for every American.

How fast our standard of living expands depends increasingly on the extent to which we are able to sell American-made products abroad. Therefore, just below standard of living is **Trade**. Unlike the other three measures of the U.S. competitive position, which assess U.S. performance against the other Summit 7 countries, the Trade

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Index reports the U.S. share of world exports as the measure of the U.S. ability to compete in world markets.

Our ability to compete in international markets, in turn, is influenced by our **Productivity**, or output per employee. U.S. productivity fundamentally affects the cost of American products relative to those of other nations. Because the vast majority of U.S. trade is in manufactured goods, the Index focuses on manufacturing productivity.

Finally, at the base of the pyramid are **Investments** — the building-blocks of long-term productivity growth. The Index measures combined investments in education, R&D, and plant and equipment. These investments build the skills, knowledge and assets that underpin long-term economic success. They are calculated here as a weighted average of the percent of GNP spent annually in these three areas. While the first three indicators provide a picture of the current U.S. economic standing, the Investment Index shows how the U.S. is positioning itself for the longer-term.

Without overstating the direct cause-and-effect relationships or underestimating time lags between the four indicators, it is important to recognize the linkages between the categories — how our standard of living is related to our success in capturing world markets, how our exports and our incomes depend in part on how productively we work, and how our productivity depends on how wisely and how much we invest. Although the complex phenomenon of competitiveness cannot be reduced exclusively to numbers, the Council believes that these four indicators provide the best guide to help the American people understand their position in the global economy.

Relative Performance

The Index is unique in its comparison of the changing U.S. economic performance to other nations. This relative comparison is critical. The U.S. economy is an integral component of a larger global economy, and it cannot be judged in isolation from the rest of the world. However, just as there is no single indicator of competitiveness, there is no single nation against which to measure America's performance. The Standard of Living, Productivity and Investment indexes compare the U.S. to the other Summit 7 nations, while the Trade Index measures U.S. performance as a share of the world total in order to take into account the rapid export growth of many developing nations.

However, the Council does provide additional information about the U.S. share of Summit 7 exports as well as detailed information on how the U.S. compares to Japan and West Germany, our two biggest industrial competitors. (Absolute levels of GNP per capita, exports and productivity are reported in the Appendix.)

Understanding the Index

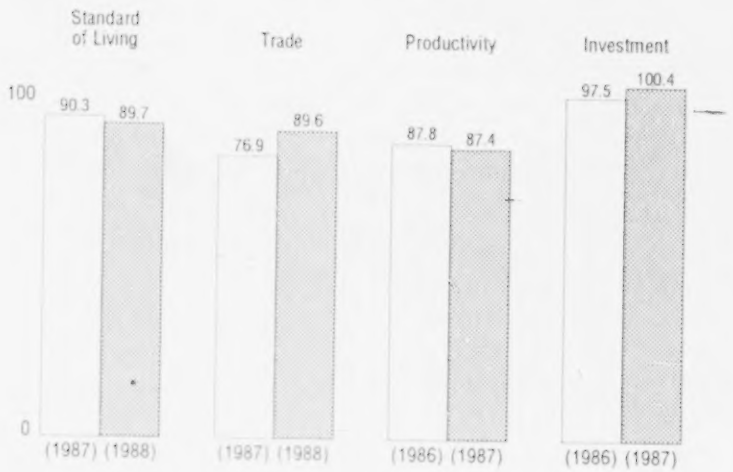
The Council uses 1972 as its base year in measuring the changing relative performance of the United States. The Index for 1972 is set at 100. A rise in the Index to more than 100 would show that the United States has outperformed other nations since then; a drop in the Index to below 100 would show that other countries have outperformed the United States.

The Council's first Competitiveness Index was released in June 1988. The methodologies employed to devise the 1989 indices differ in several respects from those used to construct the first

series of indices. First, the Standard of Living is now defined as gross national product per capita, to make it more comparable to other studies, and in line with advice received from leading economists, whereas it previously was defined as GNP per employed person plus or minus the current account balance. Second, the productivity index, calculated in real terms, is deflated using the manufacturing deflator, whereas the first index adjusted for inflation using the standard GNP deflator. These two changes have had the effect of making U.S performance relative to other nations somewhat better. With these two exceptions, the methodologies are unchanged. The data used to construct the Competitiveness Index are available by contacting the Council on Competitiveness.

The Council has been provided with technical assistance by the WEFA Group (Wharton Econometrics Forecasting Associates) in the initial construction of the Index and in this update.

Summary



HIGHLIGHTS

Standard of Living

■ In 1988, the U.S. Standard of Living Index dropped from 90.3 to 89.7, as the U.S. standard of living grew more slowly than the average of that in the other Summit 7 countries. The 1988 drop represents the fourth straight year of decline. Overall, since 1972 the standard of living of the other Summit 7 countries has grown 50% faster than that of the U.S.

Trade

■ In 1988, the U.S. export boom fueled a rise in the Trade Index from 76.9 to 89.6. While the U.S. has not recovered the export share lost when the dollar appreciated in the early 1980s, the rise in the Trade Index reveals that the U.S. has made some headway in regaining world markets.

■ While the U.S. has underperformed the rest of the world in export performance, it has outperformed the average of the other Summit 7 nations. From 1972 to 1988, the U.S. share of Summit 7 exports rose from 20 to 23 percent. However, the U.S. has been less successful compared to other countries.

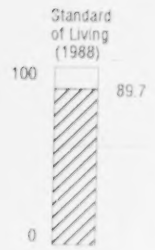
Productivity

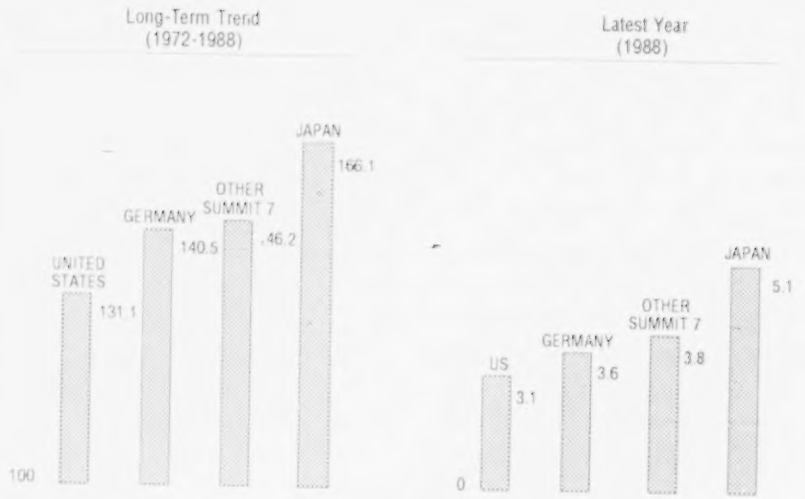
■ The 1987 Productivity Index fell from the 1986 level of 87.8 to 87.4, reflecting faster growth of manufacturing productivity in the other Summit 7 countries. Prior to 1987, U.S. productivity growth was faster than the average of the other Summit 7 for four consecutive years.

Investments

■ The Investment Index rose from 97.5 in 1986 to 100.4 in 1987, showing that U.S. investments in education, plant and equipment and research and development have increased compared to average of the other Summit 7 nations. However, the U.S. still invests a substantially smaller share of its GNP than the average of the other Summit 7 nations.

Growth in Standard of Living Since 1972 Compared to Other Summit 7 Nations





■ Since 1972, the U.S. standard of living measure increased from 100 to 131.1 points. By comparison, the standard of living measure of the other Summit 7 countries increased from 100 to 146.2, or 49 percent faster than the U.S. standard of living growth. Japan's standard of living grew over twice as fast as that of the U.S., increasing from 100 to 166.1

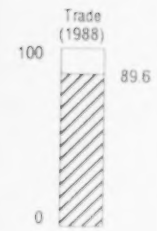
■ Because U.S. standard of living growth has been slower than the other Summit 7 countries, the U.S. Standard of Living Index has declined by about 10 percent since 1972. The 1988 index is 89.7.

■ The Standard of Living Index also fell in the most recent year, declining from 90.3 in 1987 to 89.7 in 1988. While the American standard of living increased 3.1 percent in 1988, the average of the other Summit 7 countries increased 3.8 percent, producing a small decline in the Standard of Living Index. In 1988, West Germany's standard of living rose 3.6 percent while Japan's increased 5.1 percent.

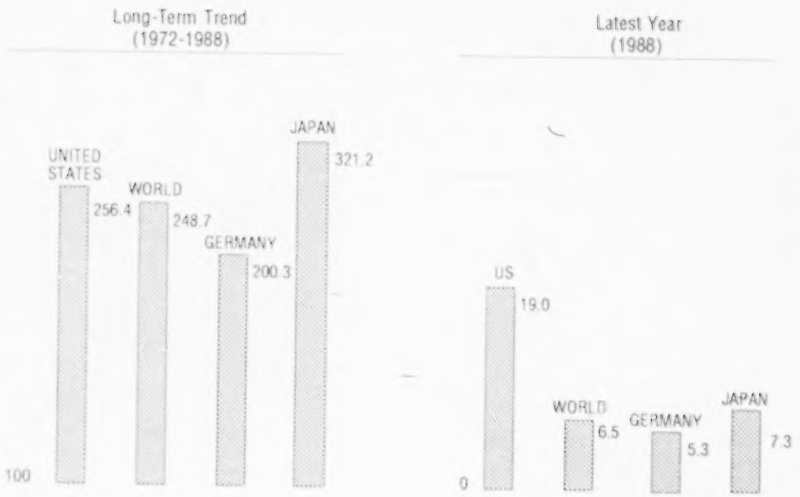
■ In absolute terms, the U.S. standard of living is still higher than the average of the other Summit 7 countries, but the gap between the U.S. and others continues to narrow. In 1972, the U.S. standard of living in absolute terms was 22 percent higher than the average of the other Summit 7; by 1988 the differential had narrowed to 9.5 percent.

■ Most of the decline in the Standard of Living Index occurred in the 1970s. The Standard of Living Index actually rose from 1982 to 1984, reflecting relatively faster gains in income in the U.S. compared to the average of the other Summit 7, and since 1984 the Index has declined only modestly. But while the U.S. has largely kept even with the other Summit 7 nations in the 1980s, it has also financed its growth partly by borrowing heavily from abroad. U.S. foreign borrowing, reflected in the large current account deficit, is a mixed blessing. While repaying the interest and principal will reduce future income, foreign borrowing, if it is used to finance investments, can contribute to improving U.S. competitiveness.

Standard of Living is defined as real Gross National Product per capita.



U.S. Export Growth Since 1972
Compared to the Rest of the World



■ Since 1972, U.S. exports have grown more slowly than world exports. As a result, the Trade Index fell from 100 in 1972 to 89.6 in 1988.

■ In the most recent year, U.S. exports grew considerably faster than world exports, and the Trade Index rose substantially, from 76.9 in 1987 to 89.6 in 1988, the second consecutive year of rapid growth in the U.S. share of world exports.

■ The U.S. has underperformed the rest of the world in generating exports since 1972, but it has outperformed the average of the other Summit 7 countries. Since 1972, the U.S. share of Summit 7 exports has increased from 20 percent to 23 percent. However, Japan has turned in a much better performance, increasing its exports 25 percent faster than the United States since 1972.

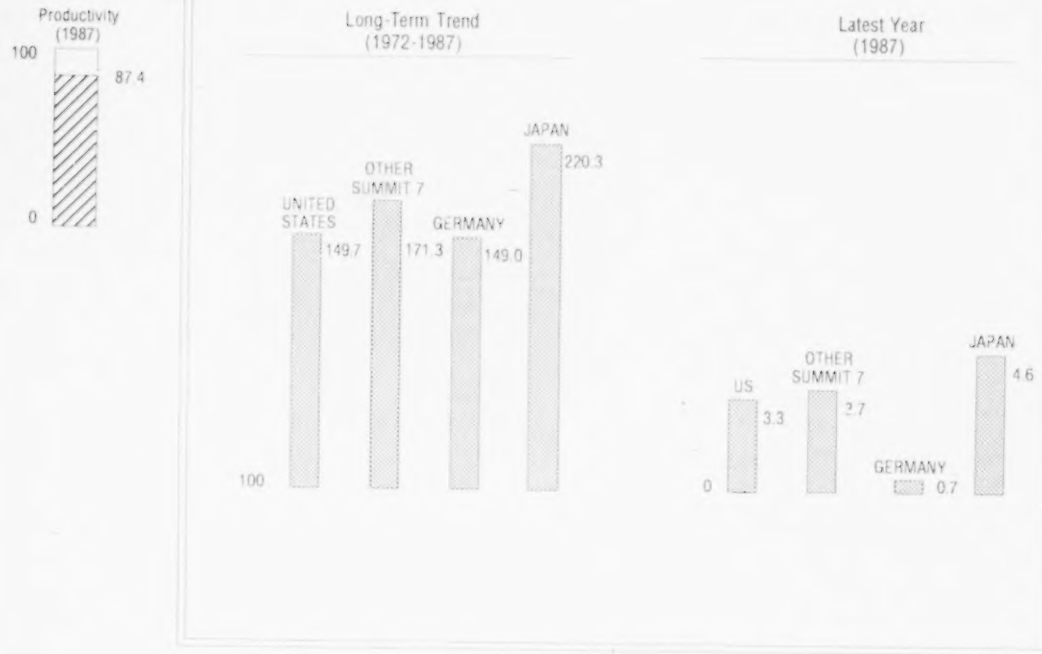
■ The short- and long-term trends in exports reveal the extreme sensitivity of U.S. exports to the value of the dollar. From 1980 to 1986, the U.S. share of world exports plunged from 13 percent to only 8 percent. In the past two years, when the dollar has been cheap compared to the early 1980s, the U.S. share of world exports has risen to 10 percent and U.S. real exports have surged by more than 30 percent. The U.S. has not recovered all of the export share lost in the early 1980s, but the low dollar has facilitated an export boom.

■ Although rapid export gains have been made, America's trade deficit remains stubbornly high. A primary cause of our continued trade deficit is the growing reliance of the U.S. on imported manufactured goods. In 1972, manufactured imports accounted for only 6 percent of manufactured output. That share has steadily risen, and in 1988 it stood at 12 percent. Even since 1985, manufactured imports have increased from 10 percent to 12 percent of total manufactured output, despite a substantial drop in the dollar against most major currencies.

■ With U.S. factories running at or near capacity, it is questionable whether the U.S. can reduce the trade deficit on the export side alone without increases in productive capacity. That, in turn, would rest on substantially higher levels of investment, which have not been forthcoming. (See Investment Index for details about investment performance.)

The Trade Index measures the U.S. share of world exports. How well we live is increasingly determined by our ability to compete in world markets. The Council chose exports as the single-best indicator of the U.S. ability to compete worldwide. The Index focuses on the U.S. share of total world exports, rather than just U.S. performance compared to the Summit 7 countries, in order to account for the rapid export growth of developing and newly-industrialized countries.

U.S. Manufacturing Productivity Growth Since 1972 Compared to Other Summit 7 Nations



■ Since 1972, U.S. manufacturing productivity growth rate has been lower than that of the average of the other Summit 7 nations. As a result, the Productivity Index dropped from 100 in 1972 to 87.4 in 1987. Since 1972 the U.S. manufacturing productivity measure increased from 100 to 149.7, compared to an increase in the average of the other Summit 7 countries from 100 to 171.3.

■ In the latest year, the Productivity Index fell from 87.8 to 87.4, reflecting slightly slower growth in U.S. productivity than in the other Summit 7 countries.

■ 1987 was the first year the Productivity Index declined since 1982. Between 1982 and 1986 U.S. manufacturing productivity growth was faster than the average of the other Summit 7 nations.

■ Since 1972, U.S. productivity has increased at about the same rate as West Germany's, but considerably slower than Japan's. Since 1972, Japanese manufacturing productivity has risen by 120 percent, compared to the 49 percent increase for the U.S. and Germany.

■ The U.S. still has the highest absolute level of manufacturing productivity, but the slower U.S. growth rate since 1972 has narrowed the U.S. advantage. In 1972, U.S. productivity in absolute terms was 27 percent higher than the average productivity of the other Summit 7 countries, but by 1987 our advantage had fallen to 11 percent. Japan has made even more dramatic strides in closing the productivity gap. In 1972, U.S. productivity was 56 percent higher than Japanese manufacturing productivity; by 1987 the U.S. advantage was less than 6 percent.

The Productivity Index measures output per employee in the manufacturing sector. Productivity fundamentally affects the cost of American products relative to those of other nations and underpins income growth. The Productivity Index compares U.S. performance to the average of the other Summit 7.

■ In 1987, U.S. investment as a percent of GNP was .9 percent higher than it was in 1972, while the investment levels of the other Summit 7 countries increased by only .22 percent of GNP. As a result, the Investment Index rose from 100 in 1972 to 100.4 in 1987.

■ In the latest year, the Investment Index increased from 97.5 to 100.4.

■ In terms of a total percentage of GNP the U.S. invests much less than the average of the other Summit 7 countries — 20.5 percent of GNP compared to 22.7 percent. Japan invests 29 percent of its GNP. The U.S. invests less in fixed capital and research and development but more on education. The U.S. spends 6.8 percent of GNP on education, compared to an average of 5.2 percent in the other Summit 7. The other Summit 7 countries invest an average 15.5 percent of GNP in fixed capital, compared to 11.8 percent for the U.S., and invest 1.94 percent of GNP in R&D, compared to 1.9 percent for the U.S.

■ Since 1972, the U.S. has invested an average of 1.1 percent of GNP more each year than the other Summit 7 countries in education, although it is not clear that higher levels of U.S. educational investment have produced better educational results. Also since 1972, the U.S. has invested about 3 percent less on average each year than the other Summit 7 countries on fixed capital and has invested about the same amount each year on R&D.

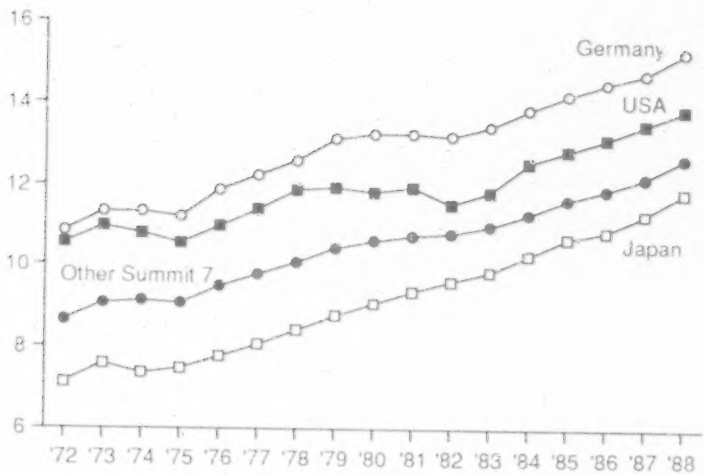
■ The U.S. saving rate is considerably lower than the average of the other Summit 7 countries. In 1987, the U.S. gross saving rate was 14.8 percent, compared to 22.9 percent for the other Summit 7 countries. West Germany's saving rate was 21.6 percent and Japan topped all Summit 7 countries with a saving rate of 28.3 percent.

■ The low U.S. saving rate means that financing higher levels of competitiveness-related investments will require either larger inflows of foreign capital or higher domestic saving. During the 1980s, however, the U.S. saving rate has fallen, from 18.4 percent in 1981 to 14.8 percent in 1987, signalling that the U.S. will have to continue to rely on foreign funds to meet domestic capital requirements. Hence, our foreign indebtedness will continue to expand.

The Investment Index is calculated as a weighted average of annual expenditures for education, non-defense R&D and plant and equipment. These investments build the skills, knowledge and assets that underpin productivity, trade and, ultimately, the standard of living. The Investment Index compares the U.S. performance to the average of the other Summit 7 nations.

APPENDIX:
LONG TERM TRENDS

Standard of Living
Trends in Absolute Growth
1972-1988
(Thousands of Dollars Per Capita)



• In absolute terms, the U.S. standard of living remains higher than the average of the other Summit 7 countries. In 1988, the share of U.S. GNP per capita was $13,840, compared to $12,640 per capita in the other Summit 7 nations. The amount of GNP per capita in the U.S. has trailed West Germany since 1972 but has remained ahead of Japan. In 1988, GNP per capita was $15,250 in West Germany and $11,820 in Japan.

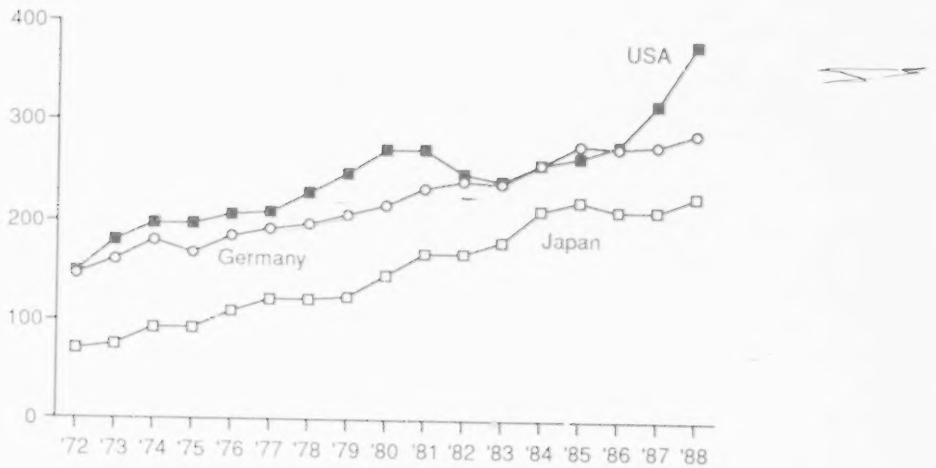
• The gap in living standards between the U.S. and the other Summit 7 nations has narrowed as a result of slower U.S. growth. In 1972, the U.S. standard of living was 22 percent higher than the other Summit 7 average, but by 1988 the differential had narrowed to 9.5 percent. The differential between U.S. and Japanese living standards has narrowed from 48 percent in 1972 to 17 percent in 1988.

• A narrower measure of standard of living, output per employee, has not grown nearly as fast in the U.S. as output per employee in the other Summit 7 countries, or as fast as GNP per capita. In 1972, output per employee was $26,240 per year, rising only to $29,630 in 1988. By contrast, output per employee rose in the other Summit 7 countries from $20,210 in 1972 to $28,940 in 1988. In other words, U.S. GNP growth has been due heavily to more employees in the labor force, not rising economy-wide productivity.

• While output per employee has grown more slowly in America, the U.S. unemployment rate has dropped well below the other Summit 7 countries. In 1972, the average unemployment rate of the other Summit 7 countries was 2.7 percent, and in 1987 it was 7.4 percent. By contrast, the U.S. unemployment rate in 1972 was 5.6 percent and only 5.5 percent in 1988. Japan's unemployment rate rose over the same period from 1.4 percent to 2.5 percent, while West Germany's increased from 1.1. percent to 8.8 percent.

Trade

Exports of Goods and Services
1972-1988
(Billions of U.S. dollars)



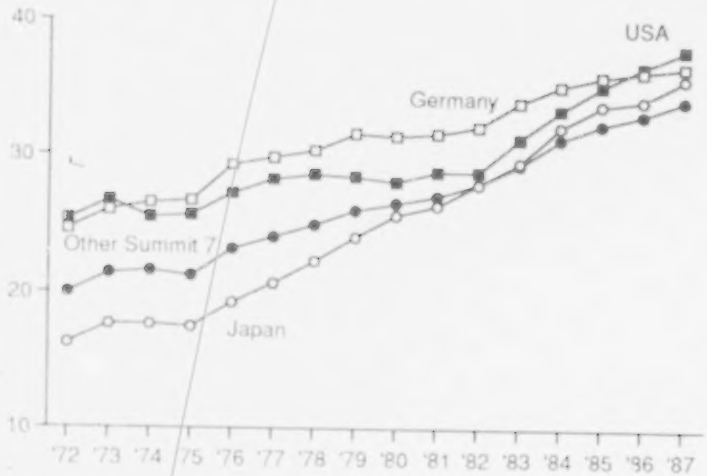
• In absolute terms, the continued U.S. export surge extended U.S. leadership as the world's top exporter. The U.S. exported $379 billion worth of goods and services in 1988, compared to $290 billion for Germany and $226 billion for Japan. However, both Japan and Germany export a larger percentage of their GNP.

• Since the decline of the dollar began in 1985, the U.S. share of world exports has increased from 8 percent to 10 percent. While this is a substantial improvement, it remains well below the 12 to 13 percent share the U.S. enjoyed throughout the 1970s.

• The U.S. has also made rapid export gains compared to the other Summit 7 countries since 1985. Over the past three years, the U.S. share of Summit 7 exports has increased from 17 percent to 23 percent, which is above the 20 to 21 percent share the U.S. held during the 1970s. However, the U.S. has been less successful compared to other countries.

• U.S. export performance is highly dependent on the value of the dollar. When the dollar is cheap, as it has been since 1985, exports surge. When the dollar is expensive, as it was from 1981 to 1985, export performance is poor. The dependence of U.S. exporters on a cheap dollar is a sign of underlying competitive weakness that many foreign competitors do not share. Imports into the United States have increased steadily despite fluctuations in the exchange rate. Since 1972, manufactured imports have increased from 6 percent of total manufacturing output to 12 percent in 1987. Even since the drop in the dollar, manufactured imports have gained a larger share of the U.S. market. Because the U.S. is becoming more dependent on imported manufactured goods, the trade deficit remains very high despite the export surge; in 1988, the overall trade deficit was $95 billion.

Productivity
Trends in Absolute Growth
1972-1987
(Thousands of Dollars per Manufacturing Employee)

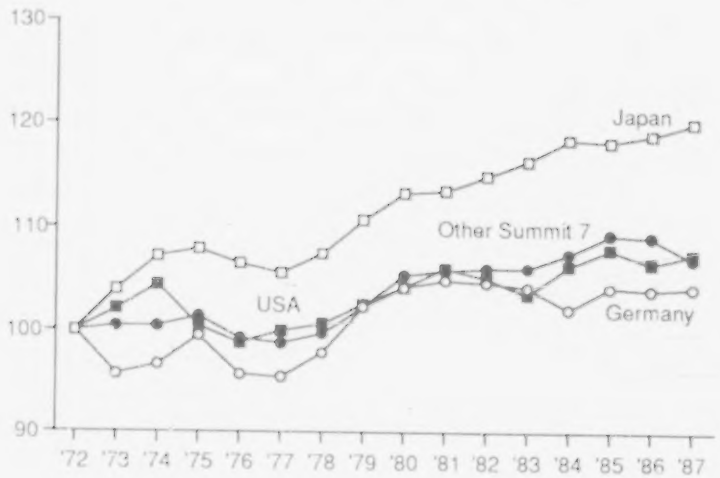


• The gap between U.S. manufacturing productivity and the average of manufacturing productivity in the other Summit 7 countries has narrowed considerably since 1972. The U.S. productivity edge in 1972 was $5300 — $25,300 per manufacturing employee compared to $20,000 for the other Summit 7 countries. In 1972, West Germany's manufacturing productivity was $24,600 per employee and Japan's was $16,200.

• By 1987, the American productivity advantage had narrowed to $3600 — $37,800 per employee compared to $34,200 per employee in the other Summit 7 countries. German manufacturing productivity was $36,600 per employee in 1987. Japan made the most substantial productivity gains, more than doubling its output per employee to $55,700 in 1987.

Investments

Index of Comparative Growth Trends
1972-1987
(1972=100)



- Since 1972, U.S. investments have grown at about the same rate as the average of the other Summit 7 countries, slightly faster than West Germany's but much slower than Japan's.

- In terms of a total percentage of GNP, the U.S. invests considerably less in plant and equipment, education and R&D than the other Summit countries — 20.5 percent of GNP compared to an average of 22.7 percent of GNP in the other Summit 7. Japan is well ahead of the U.S. in investing 29 percent of GNP.

- The U.S. invests considerably more in education than its major competitors — 6.8 percent of GNP in 1987 compared to 5.2 percent on average in the other Summit 7 countries. However, the higher level of funds directed toward education has not produced better educational performance.

- The U.S. invests substantially less than its competitors in plant and equipment. In 1987, the U.S. invested only 11.8 percent of GNP in plant and equipment, compared to 15.53 percent in the other Summit 7 countries. West Germany invested 12.3 percent, while Japan invested 21.2 percent of its GNP in plant and equipment.

- The U.S. invests about the same amount of GNP in non-defense R&D as the average of the other Summit 7 countries — 1.9 percent of GNP compared to 1.94 percent in the other Summit 7 countries. However, the U.S. significantly trails the more sophisticated competitors in R&D investment. West Germany invests 2.6 percent of its GNP in non-defense R&D, while Japan invests 2.8 percent. Moreover, both West Germany and Japan have increased R&D investment faster than the U.S. Since 1972, U.S. R&D investment has increased 19 percent, while West Germany's has increased 24 percent and Japan's has increased 47 percent.

ACKNOWLEDGMENTS

The Competitiveness Index is developed by the Council on Competitiveness, working in conjunction with The WEFA Group (Wharton Econometric Forecasting Associates).

Council Executive Committee member Michael Porter (Professor, School of Business Administration, Harvard University) serves as Project Adviser. The WEFA Group, especially Lawrence Chimerine (President) and Gerald Godshaw (Director of Government Policy Analysis), helped perform the economic analysis. Council Associate Thomas Keene produced the Index.

ABOUT THE COUNCIL

Founded in 1986, the Council on Competitiveness is an organization of leading executives from industry, organized labor and higher education who have one overriding objective: to improve the ability of American companies and workers to compete in world markets. Among the Council's more specific goals are to increase public awareness of the competitiveness challenge; to promote consensus and cooperation on competitiveness-related issues within the private sector; and to assist in the development of far-sighted government policies that help Americans compete.

The Council is governed by an executive committee and draws on the resources of its national affiliates — more than two dozen trade associations, professional societies and research organizations — to help coordinate private sector activity. The Council is privately supported through contributions from its members, foundations and other granting institutions.

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